

REMARKS

Reconsideration and withdrawal of the rejections set forth in the Office Action dated November 21, 2003 are respectfully requested. In the Office Action, claims 1-11 and 14-15 were rejected as anticipated by U.S. Patent No. 4,774,459 (Charrat). Attorneys for the applicant wish to thank the Examiner for the good search, thorough Office Action, and for finding claims 12-13 allowable.

I. Amendments

By this amendment, independent claims 1 and 9 have been amended. Dependent claim 12, which was indicated as being allowable, has been amended to be placed in independent form to include all limitations of underlying independent claim 9. Further, dependent claim 13 has been amended to depend now from claim 12. Finally, new dependent claims 16-20 have been added.

No new matter is added by these amendments. For example, support for new claims 17-20 may be found in Figure 5 and associated description. Support for amendments to claim 1 may be found at, for example, page 4, lines 14-16 and page 7, lines 18-27.

II. Embodiments of the Invention

Embodiments of the invention relate to a method for accessing a reverse channel for communicating from one of multiple remote units to a base station. In one embodiment, the remote units are fixed (as is the base station) to form a fixed wireless communication system. Under such a fixed wireless system, a given remote unit typically communicates with only a single base station. Unfortunately, a problem with such an arrangement is that the remote units typically share a single channel, and thus could all transmit simultaneously. The method under this and related embodiments includes waiting a first random period of time after determining that the reverse channel is available. The method also includes monitoring a forward channel after the first random period of time expires to determine whether the reverse channel is now available. Because the remote units wait a first random time period before transmitting, the odds of more than one unit simultaneously transmitting are reduced.

If the remote unit fails to gain access to the channel after waiting the first random period of time, the remote unit under one embodiment executes an access failure method whereby it waits a second random period of time. If the channel is still unavailable after the second random time period, then the remote unit re-executes the channel access method. See, e.g., Figure 6 and associated descriptions.

Under one of the embodiments of the invention, wireless communications are performed under a slotted protocol, wherein the base station and remote units transmit within timeslots of substantially uniform duration. If a given block of data extends beyond a slot, then it is broken into two or more portions or packet of data to be sent separately under this embodiment. Thus, after sending a first portion or packet of information in a first timeslot, the remote unit performs an access check subroutine to determine whether to send a second or subsequent packet of information during a second timeslot. The access check subroutine can include, for example, determining whether the first packet was decoded, determining whether another remote unit acquired the reverse channel, or both. See, e.g., page 7, lines 18–page 8, line 8; Figure 5 and associated description.

III. Rejections under 35 U.S.C. § 102(b)

A. The Applied Art

U.S. Patent No. 5,774,459 to Charrat is directed to a method of managing message transmission from multiple transmitters to a single receiver on a single channel. Charrat is directed to, for example, use of microwave badges for checking access or for payment purposes. Column 2, lines 47-63. Under such a system, the multiple transmitters are moving with respect to a receiver, and all are transmitting on the same, shared frequency. Column 2, lines 22-29.

Before making a transmission, a transmitter determines whether the shared frequency or channel has a busy state, and if so, goes into a standby state for a fixed and lengthy time period T_v (preferably longer than the transmission period of any transmission planned for messages). Column 3, line 64-column 4, line 5. If the channel is free, each transmitter goes into a standby state for a random time period T_a , and then tests whether the channel is busy before transmitting. Column 4, lines 6-13.

Charrat notes that:

the distribution of random elements in the period T_a , both between the transmitters and between the successive periods of one and the same transmitter, is such that the risk of having two simultaneous transmissions start on two different transmitters is almost zero.

Column 4, lines 17-22. In other words, Charrat recognizes two random events, namely the random time offset and *the random distribution of transmitting mobile units*, results in a high probability that two transmitters will not transmit at the same time. The system under Charrat is not a slotted system, but instead is a simple system where each transmitter may transmit its message until complete. Thus Charrat need not divide a single message into two or more time slots. See, for example, Figure 4, which shows different transmission blocks (shaded blocks) of different length.

B. Analysis

Distinctions between claim 1 and Charrat will first be discussed, followed by distinctions between Charrat and the remaining claims.¹

The invention of claim 1 now recites one aspect of the invention, namely a method for accessing a reverse channel for communication between fixed remote units and base stations in a fixed wireless network. In a fixed wireless network, a given remote unit typically communicates with only a single, nearby base station. More importantly, such a fixed wireless network does not have the benefit of Charrat's system. Charrat recognizes that there will be a random distribution of mobile units within range of transmitting to the base station at any given time. Such an occurrence helps lower the probability that two transmitters will transmit simultaneously at any given time within a mobile wireless network. Instead, under a fixed wireless network, the base station knows a theoretical maximum number of fixed wireless units that may be communicating with it, namely the maximum number of fixed remote units that theoretically could transmit simultaneously on the reverse channel. Thus, at best,

¹ Silence regarding the position taken, or argument made, by the Examiner does not indicate any acquiescence to that position or argument.

Charrat teaches a way from the fixed wireless system recited in claim 1, and at worst would be inoperative with such a system.

Further, the invention recited in claim 1 is directed to a slotted transmission scheme whereby a given data message may be divided into two or more portions to be transmitted within two or more time slots. As noted above, Charrat does not employ a slotted communications scheme, but instead permits transmitters to transmit messages of effectively any length. This is in part due to the environment of Charrat, that is, an ID badge or payment system using credit card-type transmitters that need only transmit simple small messages. See, e.g., column 2, lines 41-55.

Indeed, Charrat explains that a problem of the prior art is that it employs complex systems. Column 1, lines 27-29 and 34-35. Further, Charrat notes that it is "important that the data reception system as well as the management procedures should be extremely simplified, for these transmitters must be small and must cost little." Column 1, lines 53-56. In contrast, a slotted transmission scheme is more complex, because the base station and remote units typically must be synchronized, large data messages must be packetized for transmission in discrete timeslots, and so forth. Thus, Charrat teaches away from the complex slotted transmission scheme of claim 1.

As is known, to anticipate a claim under 35 U.S.C. § 102, the reference must teach every element of the claim.² Charrat fails to disclose every limitation recited in claim 1. Thus, for at least these reasons, claim 1 is patentable over Charrat.

As noted above, the invention recited in claim 1 addresses the problem of multiple transmitters potentially transmitting simultaneously on a reverse channel where

² MPEP section 2131, p. 70 (Feb. 2003, Rev. 1). *See also, Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1462 (Bd. Pat. App. & Interf. 1990) (to establish a *prima facie* case of anticipation, the Examiner must identify where "each and every facet of the claimed invention is disclosed in the applied reference."); *Glaverbel Société Anonyme v. Northlake Mktg. & Supply, Inc.*, 45 F.3d 1550, 1554 (Fed. Cir. 1995) (anticipation requires that each claim element must be identical to a corresponding element in the applied reference); *Atlas Powder Co. v. E.I. duPont De Nemours*, 750 F.2d 1569, 1574 (1984) (the failure to mention "a claimed element (in) a prior art reference is enough to negate anticipation by that reference").

one of the two random events of Charrat is not available (namely, the random distribution of transmitters at a given time). Claim 9 likewise deals with this problem. The invention of claim 9 recites that after determining that the reverse channel is available, the remote unit waits a first random period of time. After which, the remote unit determines whether access to the first channel is available, and if not, waits a second random period of time before determining whether the reverse channel is available. The first and second random periods of time are different.

As noted above, Charrat simply assumes that, given the two random distributions (random number of transmitters at any given time, and random offsets periods), the risk of two simultaneous transmitters "is almost zero." Charrat, column 4, lines 21-22. Charrat simply dismisses this very rare occurrence of collision by exiting "from the state of collision" to perform as a "system not protected against collisions." Column 4, lines 23-27.

Instead, the invention recited in claim 9 does not just dismiss such an occurrence and resort back to a "system not protected against collisions." Instead, the invention of claim 9 waits "a second random period of time" after determining access to the reverse channel failed. Again, Charrat fails to disclose every limitation recited in claim 9. Thus, for at least the above reasons, claim 9 is patentable over Charrat.

Since the independent claims are allowable, the claims which depend from them are likewise allowable. However, certain dependent claims are allowable for additional reasons. For example, dependent claim 2 is directed to timeslots; as noted above, Charrat fails to use a slotted communications scheme. Claims 3 and 4 are directed to determining availability of the reverse channel after a round-trip time period; Charrat fails to disclose this, in part, because it need not transmit simultaneous portions of a message, but instead may transmit an entire message at a given time. Further, as noted above, Charrat desires to keep the communication scheme simple. Moreover, Charrat employs moving transmitters, and thus any reliance on a round-trip time period

will vary as the transmitters move with respect to the receiver; the configuration under claims 3 and 4 is not possible in Charrat's system.

For similar reasons, Charrat fails to provide an indication to the transmitter whether the base station successfully decoded a portion of data, as recited in claim 5. Claims 6-8 and 10-11 are likewise directed to problems of transmitting portions of data related to a given message, which is unnecessary in the system of Charrat. New dependent claims 17-20 further address the issue of a remote unit needing to send a second packet or portion of data for a given message. Overall, such dependent claims recite additional limitations which make them independently patentable beyond limitations noted above for the independent claims.

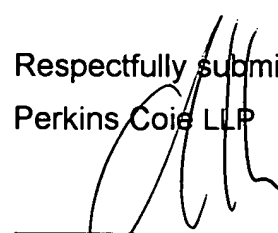
IV. Conclusion

Overall, Charrat fails to teach or suggest the features recited in independent claims 1, 9 and 12, and thus such claims are allowable. Since these independent claims are allowable, based on at least the above reasons, the claims which depend from them are likewise allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In view of the foregoing, the claims pending in the application comply with the requirements of 35 U.S.C. § 112 and patentably define over the applied art. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-3599.

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